

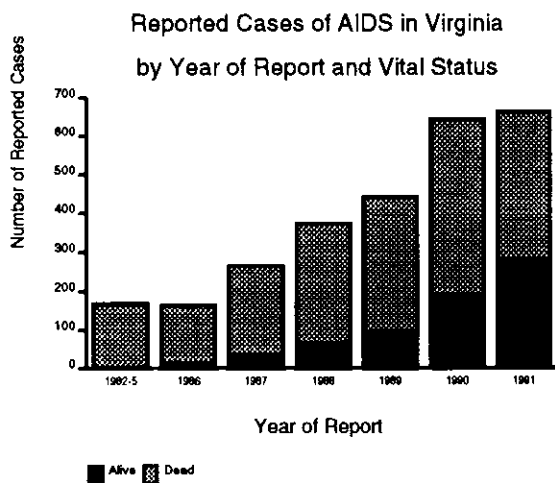
DESCRIPTIVE EPIDEMIOLOGY OF

REPORTABLE DISEASES

Acquired Immunodeficiency Syndrome (AIDS)

The number of AIDS cases reported annually continued to increase in 1991. Over the last ten years, 2,748 persons with AIDS have been reported in Virginia, ranging from 6 in 1982 to 671 in 1991. Nearly three-fourths of the reported cases have died (2,035 deaths, 74.1%). The ten year trend of the total number of reported cases of AIDS and the proportion who have died are illustrated in Figure 1.

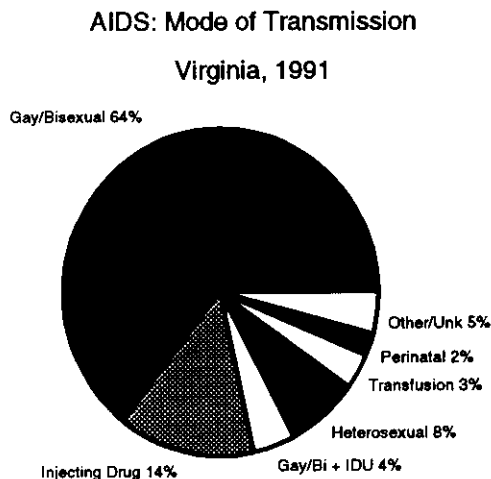
Figure 1.



AIDS is caused by the human immunodeficiency virus (HIV). The most common modes of transmission are through unprotected sexual intercourse (especially anal intercourse) and injecting drug use. During 1991, homosexual activity accounted for the greatest percentage of AIDS cases (64.4%), followed by injecting drug use

(14.0%). An additional 4.3% of cases practiced both of these high risk behaviors (Figure 2).

Figure 2.



Most AIDS cases reported in 1991 were between the ages of 20 and 49 (584 cases, 87.1%). The age group with the highest incidence rate was the 30-39 age group with 26.3 per 100,000. Sixteen pediatric (under age 12) AIDS cases were reported in 1991. Almost all of these children were infected via perinatal transmission (15 cases, 93.3% of pediatric cases).

During 1991, the majority of AIDS cases were white (365 cases, 54.4%). Blacks had 289 cases (43.1%) and the other minorities had 17 cases (2.5%). Nonwhites, however, were nearly three times more likely than whites to have this syndrome, having an incidence rate of 21.9 per 100,000 compared to 7.6 in whites. Males also represented a disproportionate share, with an incidence rate more than eight times higher than females (19.6 vs. 2.4 per 100,000, respectively).

The northern health planning region continued to experience the highest incidence rate (16.8 per 100,000), followed by the central region (14.9 per 100,000), eastern region (9.3 per 100,000), northwest region (5.8 per 100,000), and the southwest (5.8 per 100,000).

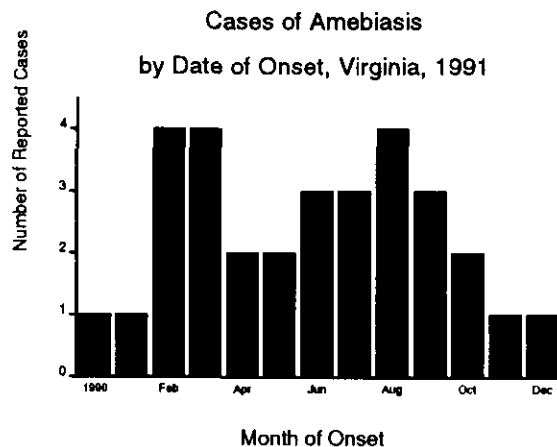
Persons with AIDS develop a variety of life-threatening opportunistic infections due to immunosuppression. The most commonly diagnosed infection is Pneumocystis carinii pneumonia (PCP). Almost half (46.6%) of the cases reported during 1991 developed PCP during the course of their illness. Other frequently diagnosed conditions included HIV wasting syndrome (20.1%), esophageal candidiasis (15.6%), HIV encephalopathy (8.7%), and Kaposi's sarcoma (7.4%).

Amebiasis

Thirty-one cases of amebiasis were reported in 1991, representing a 72.2% increase over the 18 cases reported in 1990, but equal to the mean number of cases for the previous five years. Onset of illness ranged from one to four cases per month, as shown in Figure 3.

Young adults (age 20-29) and children (age 1-9) accounted for 32% and 29%, respectively, of the reported cases. No cases occurred in infants or adults age 30 years and older. Nonwhites accounted for 12 cases, whites accounted for 7 and race was not reported for the remaining 12 cases.

Figure 3.



The male to female ratio of reported cases was 2.1:1.

Seventeen (54.8%) of the cases were reported from the northern health planning region, followed by five cases each from the eastern and central regions.

Anthrax

The last case of anthrax in Virginia was reported in 1970.

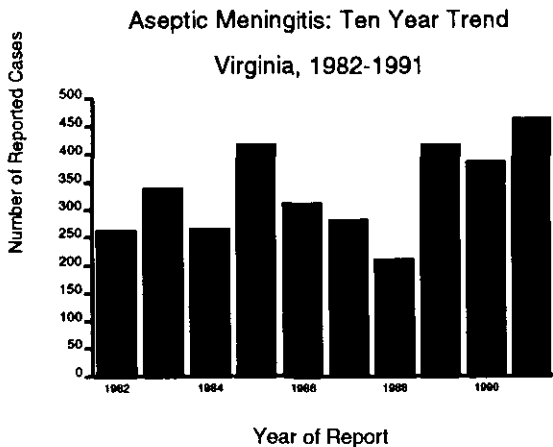
Arboviral Infection

No cases of arboviral infection were reported in Virginia in 1991. The last time a case of arboviral infection was reported in Virginia was in 1990.

Aseptic Meningitis

The number of reported cases of aseptic meningitis increased to 463 cases in 1991 (Figure 4), representing the highest number of cases reported since 1959, when 568 cases were reported. As in most years, cases occurred during the summer and fall. Seventy-five percent of the reported cases had a date of onset between June and October, with cases peaking in September.

Figure 4.



The etiologic agent was reported for 25 of the cases; 14 were unspecified enterovirus, 5 herpesvirus, 4 echovirus and 2 coxsackievirus.

Although all age groups were affected, infants had a disproportionately high incidence rate (110.7 cases per 100,000). Over one-half (57%) of the reported cases were white. Cases were almost evenly distributed among males and females with inci-

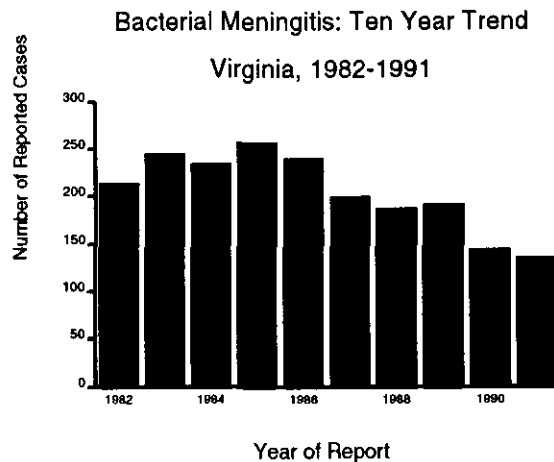
dence rates of 7.5 and 7.4 per 100,000, respectively.

For the second consecutive year, the northern health planning region had the highest incidence rate of aseptic meningitis (10.7 cases per 100,000). The eastern (9.1) and central (8.3) health planning regions were a close second and third, followed by the southwest (4.0) and northwest (3.0) regions.

Bacterial Meningitis

The 6.3% decrease in the number of reported cases of bacterial meningitis continued a downward trend which began in 1986. The 135 cases in 1991 represented the lowest number of cases reported since a high of 256 cases in 1985, as presented in Figure 5. The most commonly reported etiologic agents were *H. influenzae* (33

Figure 5.



cases) and *S. pneumoniae* (33 cases), as presented in Table 8.

Table 8. Etiology of Bacterial Meningitis Cases Reported in Virginia, 1991

<u>Organism</u>	<u>Number of Cases</u>	<u>Percent of Cases</u>
<i>Acinetobacter</i>	1	0.74
<i>Escherichia coli</i>	1	0.74
<i>Haemophilus influenzae</i>	33	24.44
<i>Listeria monocytogenes</i>	8	5.93
<i>Pseudomonas</i> unspec.	1	0.74
<i>Staphylococcus</i> :		
<i>S. aureus</i>	3	2.22
<i>S. epidermidis</i>	2	1.48
unspecified	8	5.93
<i>Streptococcus</i> :		
<i>S. pneumoniae</i>	33	24.44
Group A	1	0.74
Group B	9	6.67
Group D, unspec.	2	1.48
<i>Enterococcus</i>	5	3.70
<i>S. bovis</i>	1	0.74
unspecified	2	1.48
Unspecified	25	18.52
TOTAL	135	100.00

The majority (55%) of bacterial meningitis cases that were reported in 1991 occurred during the first half of the year. Infants had the highest incidence rate (61.7 cases per 100,000). The rate was no higher than 2.5 per 100,000 for any other age group. The incidence rate was almost twice as high in nonwhites as whites, and rates were slightly higher among males (2.3 per 100,000) than females (2.1).

Seventeen persons with bacterial meningitis died, making the 1991 case-fatality rate comparable to the 1990 rate. Thirteen (76.5%) of the persons who died were over 50 years of age, 3 were infants, and 1 was age 26. Seven (41.2%) of the deaths were associated with *S. pneumoniae* meningitis.

Meningitis caused by *N. meningitidis* is included under the heading Meningococcal Infection.

Botulism

One case of infant botulism was reported from the eastern health planning region during 1991. The case occurred in a two month old white female who developed onset of illness in June of 1991. The infant survived.

Brucellosis

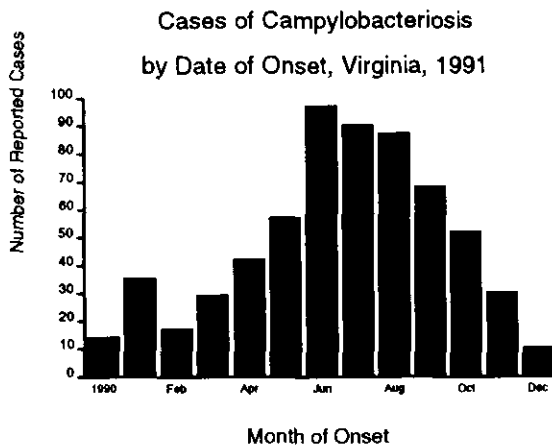
Two cases of brucellosis were reported in 1991. The same number of cases were reported in 1990. Both of the 1991 cases were adult males in their thirties. One male was white and the other nonwhite.

One case was reported from the eastern health planning region and one from the southwest. No deaths due to brucellosis were reported.

Campylobacteriosis

The 640 cases of *Campylobacter* infection reported in 1991 represented a 7% increase over the 598 cases reported in 1990, but a 7% decrease compared to the 689 cases reported in 1989. The onset of cases occurred throughout the year and peaked in the months of June and July with 97 and 90 cases, respectively (Figure 6). In seven of the last 10 years (1982-1991) reported cases have peaked during the mid-summer months (July-August).

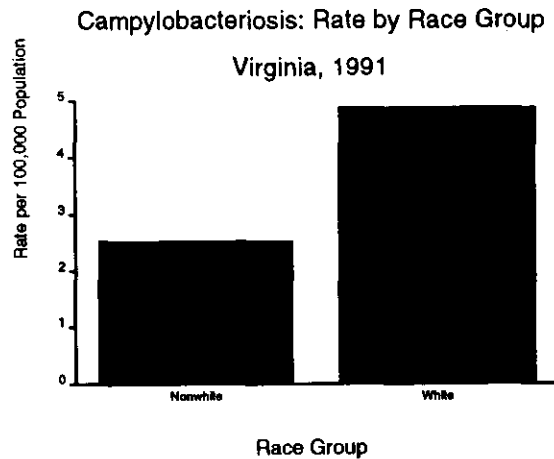
Figure 6.



The highest incidence rate (37.8 cases per 100,000) was observed among infants, followed by adults aged 20-29 (15.0). Whites were twice as likely to be infected as non-whites (Figure 7), and the incidence rate among males was slightly higher than females.

Species was not reported for over one-third of the cases. *C. jejuni* was identified

Figure 7.



as the species for 406 (63.4%) cases and *C. coli* for 21 cases (3.3%).

The northwest health planning region reported the highest number of cases (144) and incidence rate (17.3 cases per 100,000). Incidence rates in the other health regions were as follows: central 13.2; northern 10.1; southwest 8.8; and eastern 6.2.

Chancroid

Thirteen cases of chancroid were reported in 1991, which represented a 160% increase over the number of cases reported in 1990. Nine cases were male and four were female.

Chickenpox

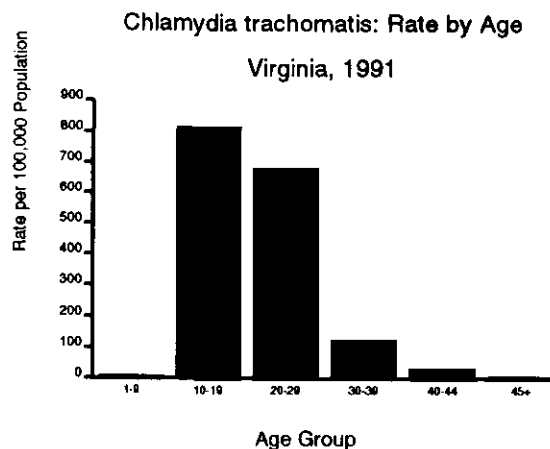
The 2,942 cases of chickenpox were approximately 10% more than the 2,677 cases reported in 1990. The eastern health planning region reported the most cases (2,160) and had the highest incidence rate (136.8 cases per 100,000), followed by the southwest region (21.9 cases per 100,000), northern region (19.6 cases per 100,000), northwest region (12.1 cases per 100,000), and central region (11.5 cases per 100,000). The city of Virginia Beach reported more cases (1,245) and had an incidence rate higher than any other locality statewide (316.7 per 100,000).

Chlamydia trachomatis Infection

During 1991, 16,717 cases of *Chlamydia trachomatis* infection were reported. Forty-nine percent were nonwhite (8,246 cases, 590.8 per 100,000), 27% of the cases were white (4,573 cases, 95.4 per 100,000), and 23.3% of the cases were race unspecified. The majority of the cases (85.0%) were between the ages of 10 and 29, with forty percent of the cases in the 10-19 age group (6,790 cases, 811.1 per 100,000). (Figure 8). The male to female ratio was 1:20.

The data are expected to be an underestimate of the incidence of *Chlamydia trachomatis* infections because (1) screen-

Figure 8.



ing has been limited to high risk females attending certain public health clinics, (2) as many as 75% of women and 25% of men with uncomplicated *C. trachomatis* infections are asymptomatic, and (3) persons with gonorrhea presumptively treated for *C. trachomatis* infection are not included in the case counts. The Centers for Disease Control estimate the morbidity due to this organism to be twice that of gonorrhea. By using this method, the number of *C. trachomatis* infections that occurred in Virginia during 1991 was more than twice the number of infections that were actually reported.

Congenital Rubella Syndrome

No cases of this condition have been reported in Virginia since 1981.

Creutzfeldt-Jakob Disease

Although not an officially reportable disease, six cases were reported in 1991. Four cases were male and two were female. The cases were all white with an age range of 65 to 79 years.

Five of the six cases reported were deceased. Three cases were reported from the eastern health planning region, northwest two, and northern one.

Diphtheria

No cases of diphtheria were reported in 1991. The last case was reported in 1989.

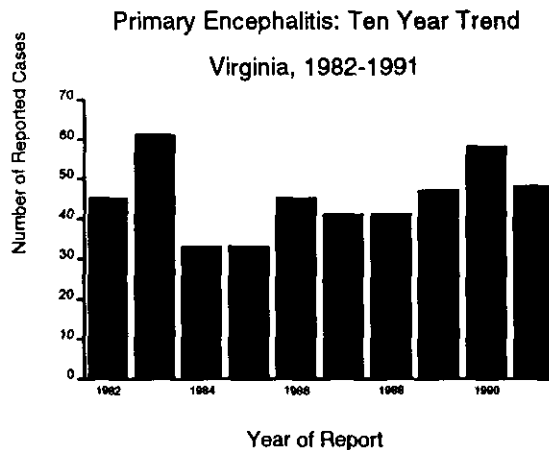
Ehrlichiosis, Human

Three case reports of this disease, which is not officially reportable, were received in 1991, matching the total for the previous report year. Cases included two adult white males and one adult white female. One case occurred in the month of April, one in June, and the other in July. Two cases were reported from the eastern health planning region and one from the southwest region.

Encephalitis, Primary

The total of 48 cases of primary encephalitis reported in 1991 was 17.2% less than the 58 cases reported in 1990. The 48 cases reported in 1991 represented the second highest number of reported cases since 1983 (61 cases), as shown in Figure 9. The etiology was specified for 29 (60.4%) of the cases. Of these, 19 were viral (including 9 specified as herpesvirus) and 10 were Toxoplasma gondii.

Figure 9.



Cases occurred throughout the year but peaked during the third quarter when 12 cases were reported, compared to a range of six to nine cases during the other three quarters. Six of the cases reported in 1991 had onset in 1990.

Infants had the highest incidence rate (6.3 cases per 100,000), followed by the 40-49 age group (1.1). Incidence rates were less

than or equal to 1.0 per 100,000 for each of the remaining age groups.

The incidence rate was higher for non-whites than whites (0.9 vs 0.5). Race, however, was not reported for 11 cases. The incidence rate was slightly higher for males than females (0.8 cases per 100,000 vs. 0.7 cases per 100,000).

Incidence rates were higher in the northern and northwest health planning regions (1.1 cases each per 100,000) than in other regions of the state. Approximately one-half (52.1%) of the cases were reported from these two regions. The eastern health planning region reported the next highest number of cases (14), followed by the southwest region (6), and the central region (3).

All cases due to Toxoplasma gondii died. The total number of deaths associated with primary encephalitis for 1991 was 14.

Encephalitis, Post-infectious

Three cases of post-infectious encephalitis were reported in 1991. The cases were among males whose illness was preceded by an acute onset of chickenpox. Cases occurred during the months of May and June. One case each was reported from the northern, central and eastern health planning regions. No deaths were reported.

Fifth Disease

No cases were reported in 1991. The last case reported in Virginia was in 1990. Fifth disease is not an officially reportable disease in Virginia, however, reports are recorded when they are received.

Foodborne Outbreaks

Seven foodborne outbreaks were reported in 1991. These are summarized in Table 9. The number of persons who became ill ranged from 7 to 101 for each outbreak. Salmonella species was the etiologic agent most often identified with these seven outbreaks. An outbreak of S. poona in Virginia and 23 other states and Canada was epidemiologically linked to the consumption of cantaloupe. Nationally, more than 400 cases of S. poona were associated with this outbreak, which was described in the August 16, 1991 issue of the Morbidity and Mortality Weekly Report (Vol. 40, No. 32).

Fungal Disease

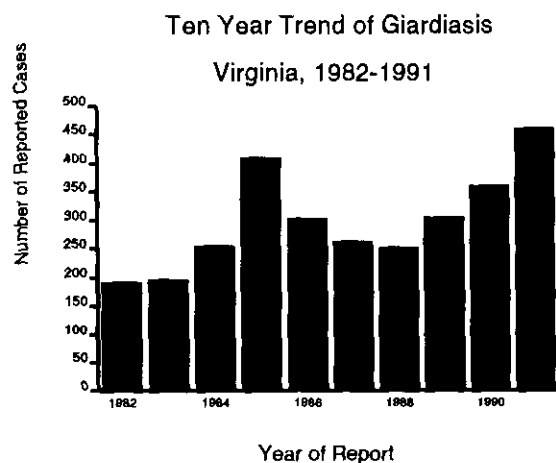
Although fungal diseases other than histoplasmosis are not officially reportable in Virginia, selected fungal diseases are recorded when reported. In 1991, reported fungal diseases other than histoplasmosis included 34 cases of cryptococcosis (in-

cluding 28 reports of cryptococcal meningitis) and 2 cases of blastomycosis.

Giardiasis

The 459 cases of giardiasis reported in 1991 represented an increase of 27.9% over the 359 cases reported in 1990 and the highest number of cases ever reported in a single year (Figure 10). The number of reported cases increased in each health planning region, ranging from a 5.6% increase in the southwest region to 60% in the eastern region.

Figure 10.



The highest incidence rate of 19.9 cases per 100,000 was in the 1-9 age group. Only one case was reported in infants; age was not reported for 39 cases. Incidence rates were comparable in the race and sex groups.

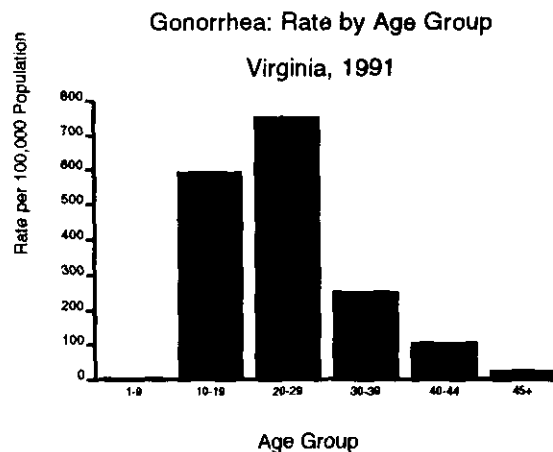
Disease incidence peaked during the third quarter when 43.1% of reported cases occurred. Incidence rates ranged from 9.6 per 100,000 in the northern health planning region to 4.6 in the southwest region.

Gonorrhea

Gonorrhea continued to be the most frequently reported disease in Virginia. In 1991, 17,256 cases of gonorrhea were reported, representing a 2.2% decrease from 1990. This was the first time since 1987 that the number of gonorrhea cases declined compared to the previous year.

Nearly three-fourths (74%) of all gonorrhea in Virginia occurred in 15-29 year olds (12,853 cases), with the highest incidence rate occurring in the 15-19 age group (1057.6 per 100,000). Persons age 20-29 had an incidence rate of 750.8 per 100,000 (Figure 11).

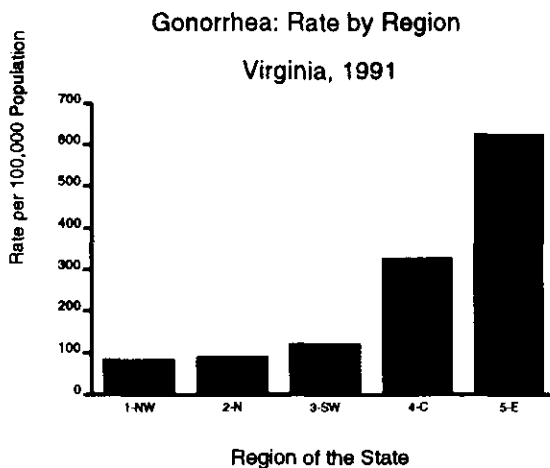
Figure 11.



Eighty-six percent of cases were nonwhite (14,893 cases, 1067.1 per 100,000), seven percent of the cases were white (1,183 cases, 24.7 per 100,000), and seven percent were race unspecified (1,180 cases). The male to female ratio was 1.47:1.

The eastern health planning region reported the most cases (9,971 cases, 631.7 per 100,000), followed by the central (3,551 cases, 334.3 per 100,000), southwest (1,579 cases, 126.9 per 100,000), northern (1,403 cases, 95.7 per 100,000), and the northwest (751 cases, 89.9 per 100,000). (Figure 12).

Figure 12.



Penicillinase-Producing *Neisseria gonorrhoeae* (PPNG)

The incidence of PPNG remained hyperendemic in Virginia, increasing to 10.7% of the state's gonorrhea morbidity. The 1,841 cases of PPNG reported represented a 39.6% increase over 1990, a larger annual

increase than was observed between 1989 and 1990 but smaller than the 111% increase seen between 1988 and 1989. Implementing a treatment regimen of ceftriaxone for treating gonorrhea may have had a positive impact on the spread of this resistant form of gonorrhea.

The male to female ratio was 2:1. The eastern health planning region reported the most cases of PPNG (1,304 cases, 70.8%), followed by the central region (314 cases, 17.1%), the northern region (159 cases, 8.6%), the northwest region (34 cases, 1.8%), and the southwest region (30 cases, 1.6%).

Granuloma Inguinale

No cases of granuloma inguinale were reported in Virginia in 1991. Two cases were reported in 1990.

Haemophilus influenzae Infection, Invasive

Invasive Haemophilus influenzae infection became officially reportable in Virginia on February 15, 1989. Before the Rules and Regulations of the State Board of Health were amended in 1989, reporting of H. influenzae infection was limited to meningitis.

Other invasive H. influenzae infections that are now reportable include epiglottitis, cellulitis, pneumonia, septicemia, septic arthritis, pericarditis and peritonitis.

The following data includes all invasive H. influenzae infections reported. Meningitis caused by H. influenzae is also included under the heading Bacterial Meningitis.

Sixty-two cases of invasive H. influenzae infection were reported in 1991 compared to 60 in 1990, and 50 cases in 1989. Thirty-six (58.1%) cases that occurred in 1991 had onset between January and June.

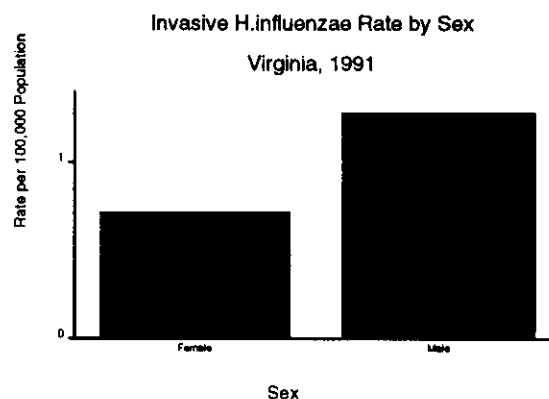
The 22 cases reported in infants produced an incidence rate of 27.7 cases per 100,000. As in previous years, incidence rates were higher in infants, followed by children age 1-9 (2.3) and persons age 50 and older (1.0). Incidence rates were comparable for the different race groups.

Males were almost twice as likely to be reported as females (1.3 cases per 100,000 vs. 0.7 cases per 100,000), as illustrated in Figure 13.

Incidence rates by health planning region ranged from a low of 0.5 cases per 100,000 in the northern region to a high of 2.6 in the northwest.

Two deaths in adults (one male and one female) were due to invasive H. influenzae disease. Both deaths were reported from the northwest health planning region.

Figure 13.

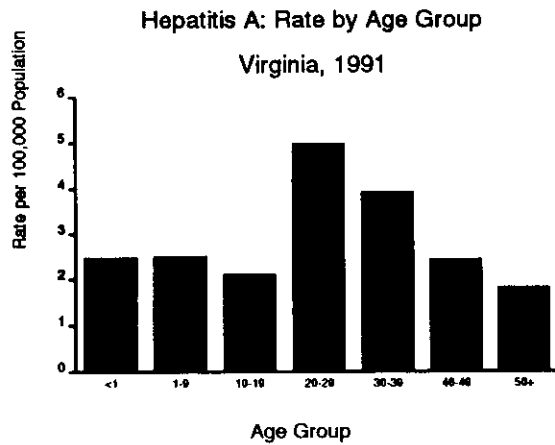


Hepatitis A

The number of cases of hepatitis A reported in 1991 (191 cases) represented a 36.8% decrease from the 302 cases reported during the previous year. Onset was fairly evenly distributed between each of the first three quarters of 1991, with 42-56 cases experiencing onset each quarter, compared to the last quarter when only 24 cases occurred.

The incidence rate of hepatitis A by age group was highest among the 20-29 year olds (5.0 cases per 100,000) followed by the 30-39 year olds (4.0), as illustrated in Figure 14. Combined, these two age groups accounted for 51.3% of the total number of cases reported. The number of cases and corresponding incidence rate was highest among whites (139 cases, 2.90 per 100,000). Males outnumbered females 2 to 1 (Figure 15).

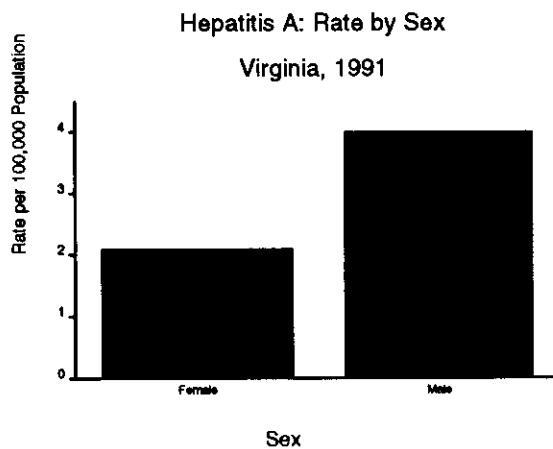
Figure 14.



The northern health planning region reported 50% of the state total of 191 cases. The incidence rate in the northern region (6.5 per 100,000) was twice the state rate of 3.1.

One outbreak of hepatitis A was reported in 1991. An unidentified common source exposure and subsequent person to person transmission in an extended family began

Figure 15.

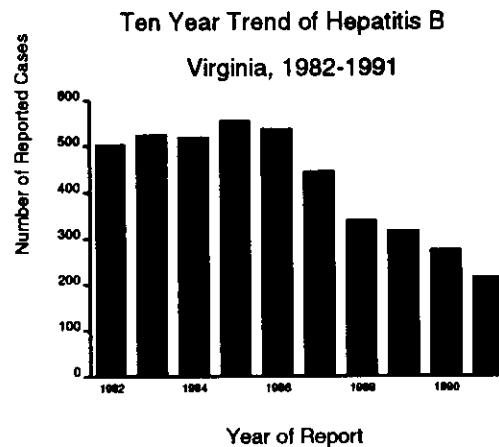


in the third quarter of 1991 and continued into the fourth quarter. No cases were linked to anyone outside of the family.

Hepatitis B

The 219 cases of hepatitis B in 1991 represented the fewest cases reported in any year for the last 10 years (Figure 16). Cases

Figure 16.



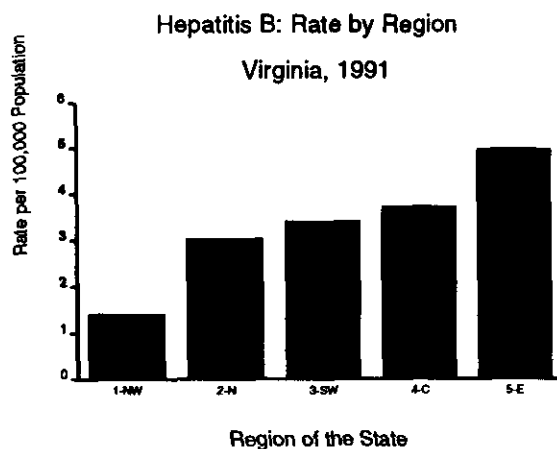
were almost evenly distributed throughout the year, however, 40 (18.26%) of the cases reported in 1991 had onset in 1990.

Incidence rates by age were similar to hepatitis A in that the rate was highest among the 20-29 year olds, followed by the 30-39 year olds. Incidence rates by race for hepatitis B, however, differed greatly from hepatitis A. Nonwhites were three times more likely than whites to be infected with hepatitis B (6.9 per 100,000 population vs. 2.3, respectively). The incidence rate by

sex for hepatitis A and B was the same for males, but females were slightly more likely to be reported with hepatitis B than A.

Incidence rates by region ranged from 1.4 cases per 100,000 in the northwest health planning region to 5.0 in the eastern region (Figure 17).

Figure 17.



Seven Virginia residents reported in 1991 died from hepatitis B, ranging in age from 27 to 69 years. Six of the seven persons who died were male.

Hepatitis Non-A, Non-B

In 1991, 37 cases of hepatitis non-A, non-B were reported from 18 localities. These 37 cases represented a 19.6% decrease from last year's total of 46 cases and a departure of 50% from the 10 year mean of 74 cases. Approximately 95% of the cases were in the

20 and older age groups with persons age 30-39 having the highest reported incidence rate (1.1 cases per 100,000). No cases were reported in infants or the 10-19 age group. Nonwhites had a 50% higher incidence rate than whites.

The incidence rate was slightly higher for males than females. The case-fatality rate, however, was proportionately higher for females than for males (31.3% vs. 19.0%). Nine deaths due to hepatitis non-A, non-B were reported in 1991; five were female. The age of those that died ranged from 44 to 80 years.

Hepatitis Unspecified

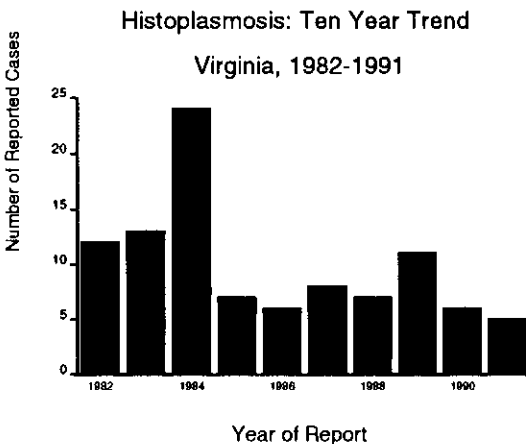
The 138 reported cases of viral hepatitis type unspecified reported in 1991 were comparable in number to the 148 cases reported in 1990. Individuals between the ages of 20 and 39 accounted for 55.8% of the reported cases. The total number of cases were evenly divided between whites and nonwhites. The incidence rates, however, were 1.4 per 100,000 for whites vs. 4.9 per 100,000 for nonwhites.

The majority (51.4%) of the cases were reported from the eastern health planning region and fewer than 25 cases were reported from each of the other regions; the same as last year. The only reported death due to hepatitis unspecified was a 65 year old female.

Histoplasmosis

Reported cases of histoplasmosis declined for the second consecutive year (Figure 18). The five cases reported in 1991 was the lowest number of cases since 1972 when one case was reported. Two cases had a history of onset in the last quarter of 1990. The cases ranged in age from 30 to 76 with an average age of 52.4. The number of males reported outnumbered females 4 to 1. Race (white) was reported for only two cases. One death was reported in a 76 year old white male from the central health planning region. At least one case was reported from all health planning regions except the southwest.

Figure 18.

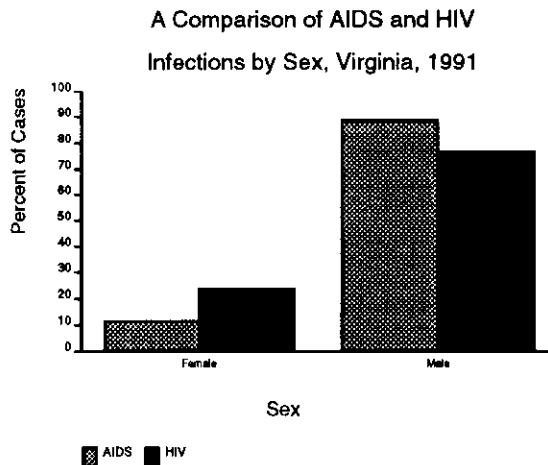


Human Immunodeficiency Virus (HIV) Infection

During 1991, 1,636 HIV infections were reported, bringing the cumulative total of cases reported since 1989 to 2,972. Fifty-five percent of the cumulative infections were reported in 1991. Trends in HIV infection are important because they are likely to be predictive of future AIDS trends.

Males represented the majority (1,254 cases, 76.6%) of the HIV infection reports and were greater than three times more likely to have the infection than females (41.3 per 100,000 vs. 12.1 in females). Females comprised a much larger proportion of HIV infections (23.4%) than of AIDS cases (11.5%), as shown in Figure 19. During 1991, the majority of cases were black (1,059 cases, 64.7%). Whites represented

Figure 19.



31.2% of the HIV infections while other minorities represented 2%. Race was not reported for 30 cases. Nonwhites were eight times more likely than whites to be infected, having an incidence rate of 80.6 per 100,000 compared to 10.7 in whites.

Compared to persons with AIDS, persons with HIV infection were more likely to have become infected through heterosexual contact and less likely to attribute their infection to gay/bisexual activities.

The majority of persons with HIV infection were between the ages of 20 and 39 (1,259 cases, 77.0%). Persons in their twenties and persons in their thirties were reported with nearly equal frequency (622 cases, 56.8 per 100,000 vs. 637 cases, 58.7 per 100,000, respectively). Thirteen pediatric HIV infections were reported in 1991. Of these children, nine (69.2%) were infected through maternal transmission.

The largest incidence rate was calculated for the central health planning region (47.7

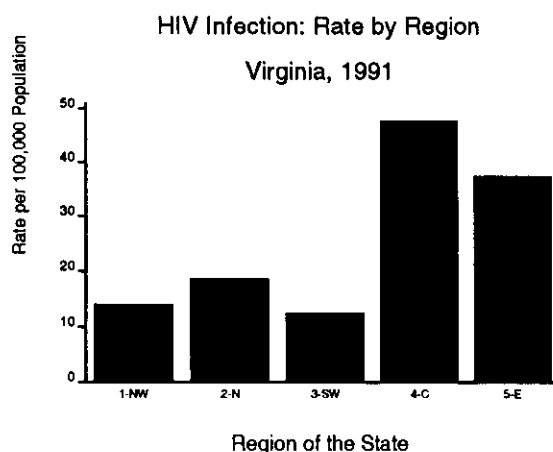
per 100,000), followed by the eastern region (37.3) and the northern region (18.4). The northwest region experienced an incidence rate of 13.9, while the rate in the southwest was 12.4 per 100,000 (Figure 20).

Influenza

The influenza season in Virginia usually runs from the fourth quarter (October - December) of one year through the first quarter (January - March) of the following year. During this period, the health department initiates an active influenza surveillance system. Under this system, weekly surveys of sentinel physicians from around the state regarding the occurrence of influenza are conducted. Through our passive disease reporting system (January - December), however, sporadic cases of influenza-like illness are reported throughout the calendar year. Information from our passive and active reporting systems, and laboratory identification of influenza viral agents are used to monitor and define influenza activity in Virginia. Cases are tabulated weekly and areas of the state in which there are sporadic, regional or widespread activity of influenza or influenza-like illness are identified.

There were 1,392 cases of influenza reported through the passive surveillance system in 1991, representing a 48.6% increase over the 937 cases reported in 1990. This increase may be explained by the early onset of influenza activity during the 1991-

Figure 20.



92 influenza season. There was a significant increase in the number of cases reported in December, 1991 (601 cases) compared to 126 cases reported in December, 1990. Historically, influenza activity peaks in February. Due to an earlier than usual onset of influenza activity during the 1991-92 "flu" season, however, it peaked in December, 1991.

During the 1990-91 influenza season, influenza B virus was isolated in Virginia. Based on sentinel physician data, widespread activity began in the second week of January and peaked in early February. By comparison, influenza A virus was isolated in Virginia during the 1991-92 influenza season and influenza activity reported through the sentinel system peaked approximately eight weeks earlier than during the 1990-91 influenza season (Figure 21).

Influenza incidence rates throughout calendar year 1991 ranged from a low of 0.7 cases per 100,000 in the northern health

planning region to a high of 48.0 cases per 100,000 in the southwest region.

Kawasaki Syndrome

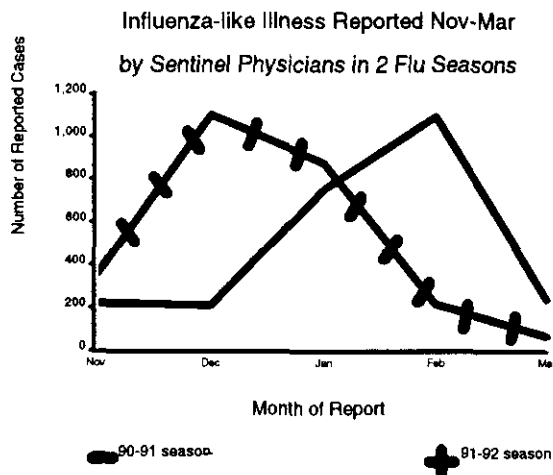
The same number of confirmed cases of Kawasaki syndrome were reported in 1991 as in 1990. Ten of the 24 cases reported had onset during the first quarter of 1991 and five during the second quarter. An illness primarily of the young, 22 (91.6%) of the cases were less than 10 years old, and 70.8% of the cases were less than 5 years old.

The incidence rate was highest for infants (3.8 cases per 100,000), followed by the 1-9 age group (2.4) and the 10-19 age group (0.2).

Nonwhites were almost three times more likely to be reported than whites, and males had a higher incidence rate than females (0.49 vs. 0.29 per 100,000).

Cases were reported from throughout the state, however, the frequency of reports was greatest in the northern health planning region where 12 cases were reported for an incidence rate twice that of any other area. No deaths due to Kawasaki syndrome were reported in 1991.

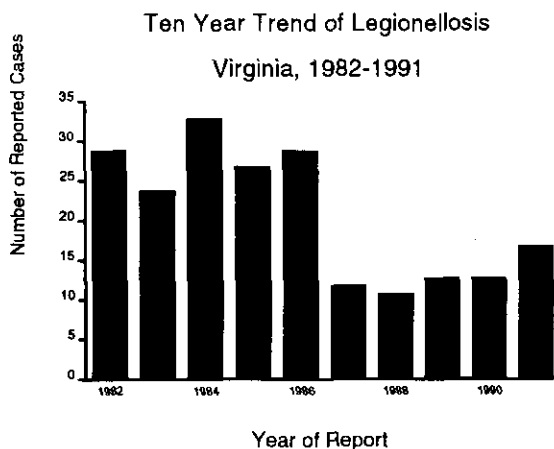
Figure 21.



Legionellosis

Reported cases of legionellosis increased to 17 during 1991, marking the first change in the number of reported cases in two years. The 30.8% increase represented the largest yearly percentage change since 1987 when the number of cases decreased by 58.6% (Figure 22).

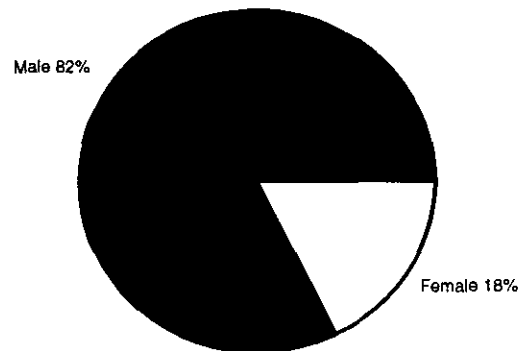
Figure 22.



The total number of cases and corresponding incidence rate was highest for the 50 and above age group. Although the incidence rate for this age group was approximately three times that of the state, the rate was less than 1.0 case per 100,000. The mean age in years for females was 54 compared to 53 for males. Whites accounted for approximately 60% of the cases and males outnumbered females 5 to 1 (Figure 23). All four deaths due to legionellosis reported in 1991 were males who ranged in age from 45 to 62 years.

Figure 23.

Legionellosis: by Sex
Virginia, 1991



The northwest health planning region had the highest incidence rate, followed by the northern region. Combined, these two regions accounted for approximately 65% of the reported cases.

Leprosy

No cases of leprosy were reported in Virginia in 1991. The last report of a case occurred in 1986.

Leptospirosis

The last reported case of leptospirosis in Virginia was in 1990.

Listeriosis

Twenty-one cases of *Listeria* infection (including meningitis) were reported in 1991 compared to 25 cases in 1990. The majority (76.2%) of cases occurred between June and October.

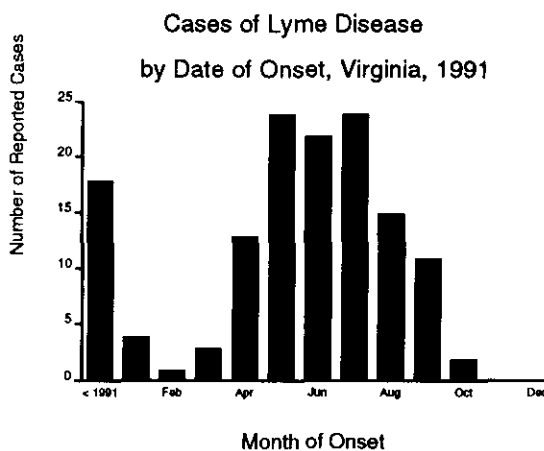
The ages of cases ranged from newborn to 97 years. Two cases were infants, one was a 5 year old, and the rest were adults age 22 or older. Thirteen of the cases (62%) were 50 years or older. Of the 21 cases reported, 12 (57.1%) were white, 2 (9.5%) were non-white and race was not reported for 7 (33.3%) cases. The incidence rate by sex was higher for males than for females (0.62 per 100,000 vs. 0.38 per 100,000).

As few as one case (northwest) and as many as six cases (eastern) were reported from the five health planning regions. Five cases each were reported from the northern and central regions, and four cases were reported from the southwest.

Lyme Disease

One hundred fifty-one cases of Lyme disease were reported in 1991. This number represented a slight increase over the 1990 figure of 129 cases and a considerable increase over the 54 cases reported in 1989 when Lyme disease became officially reportable in Virginia.

Figure 24.



Onset peaked between the months of May and July, when 46.4% of the cases occurred (Figure 24). Except for infants, all age groups were affected by Lyme disease. Incidence rates per 100,000 by age group ranged from 1.0 cases in 10-19 year olds to 3.3 in the 50 and above age group. Whites were almost three times more likely to be reported with Lyme disease than nonwhites (2.7 cases vs. 1.0 cases per 100,000). The incidence rate was comparable for males and females (2.5 and 2.4 per 100,000, respectively).

The northern health planning region reported the most cases (47, 3.2 cases per 100,000). The incidence rates ranged from a low of 2.0 cases per 100,000 in the central health planning region to 2.3 cases in each of the remaining health planning regions.

Reports from one medical practice contributed 61% of the southwest health planning region cases. This cluster of cases is being investigated.

Lymphogranuloma Venereum

Eighteen cases of lymphogranuloma venereum were reported in 1991. This represented an increase of 800% over the number reported in 1990.

Malaria

Fifty-two cases of malaria were reported in 1991, comparable to the 54 cases reported in 1990, but approximately 50% higher than the average number (35 cases) reported for each of the last ten years.

Cases occurred during each month of the 12 month reporting period with an additional 2 cases having onset in 1990. Approximately one-half (25) of the cases reported in 1991 occurred during the third quarter, followed by 12 during the second quarter.

With the exception of infants, cases were distributed throughout the specific age groups. Four age groups had comparable incidence rates, which ranged from 0.9 cases per 100,000 to 1.1 cases per 100,000. Nonwhites were four times more likely to be reported with malaria than whites. The incidence rate was higher for males than females (1.0 vs. 0.7 per 100,000).

The place where disease exposure most likely occurred was reported for 42 cases.

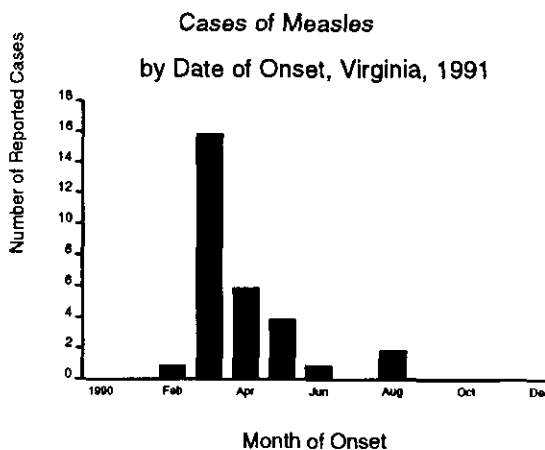
Twenty-two had a history of travel to an African country, 7 to India, 4 to Pakistan, 3 to Central America, 3 to South America, 2 to the South Pacific, and 1 to Southeast Asia.

Twenty-two cases were caused by Plasmodium vivax, 16 by P. falciparum, 5 by P. malariae, 2 by P. ovale, and 7 by unspecified species.

Measles (Rubeola)

Thirty confirmed cases of measles were reported in 1991, compared to 86 in 1990 and 22 in 1989. Five cases were imported and 25 were indigenous. Outbreaks occurred in the northern and eastern health planning regions plus the Richmond City area. Peak onset occurred in March, when 16 cases were confirmed. (Figure 25).

Figure 25.



All of the cases were under the age of 30; three were less than 1 year of age (3.8 per 100,000); eight were age 1-9 (1.0 per 100,000); ten were age 10-19 (1.2 per 100,000); and nine were in the 20-29 age group (0.8 per 100,000).

The measles incidence rate was higher in nonwhites (18 cases, 1.3 per 100,000) than in whites (10 cases, 0.2 per 100,000). Race was not reported for two cases. The rate in females (17 cases, 0.5 per 100,000) was slightly higher than that for males (13 cases, 0.4 per 100,000). The large majority of cases (93.3%) occurred in the first half of the year.

Meningococcal Infection

The number of reported meningococcal infections (meningitis or septicemia) continued to decline. During 1991, 39 cases

were reported compared to 58 cases in 1990 and 73 cases in 1989 (Figure 26).

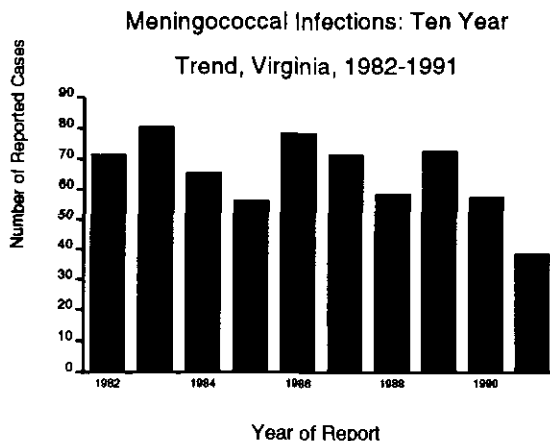
The majority (79.5%) of cases were in persons age 19 and under. The age group with the highest reported rate of infection was infants (8 cases, 10.1 per 100,000), followed by the 1-9 year olds (14 cases, 1.8 per 100,000). The incidence rate for whites was comparable to nonwhites and females were almost as likely as males to be reported.

Meningococcal infections occurred throughout the year. A minimum of six cases occurred during each of the four quarters. The incidence of cases, however, was highest during the second quarter.

Cases were fairly evenly distributed by health planning region. Incidence rates ranged from 0.5 per 100,000 in the eastern health planning region to 0.8 per 100,000 in the southwest region.

The serotype was identified for 16 (41%) cases. Eight were specified as group B, six as group C, and two as group Y. Deaths were reported in two white males whose serotypes were not provided.

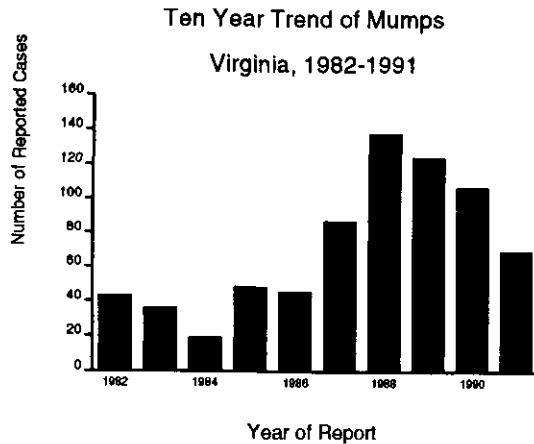
Figure 26.



Mumps

The seventy cases of mumps reported in 1991 represented the lowest level of mumps activity observed since 1986 (Figure 27). The largest number of cases was seen in the second quarter of the year (23

Figure 27.



cases, 32.9%), the smallest in the fourth quarter (10 cases, 14.3%).

Eighty percent of the cases were in the 1-9 and 10-19 age groups. The incidence rate in these two age groups was 3.9 and 3.0 per 100,000, respectively.

Although more cases were white (31 cases) than nonwhite (23 cases), the incidence rate of disease was higher for nonwhites (1.7 vs. 0.7 per 100,000). Race was not reported for 16 cases (22.9%). Thirty-five cases of mumps were reported for each sex.

The northern health planning region experienced the most mumps morbidity (24 cases, 1.6 per 100,000), followed by the eastern region (21 cases, 1.3 per 100,000). The other health planning regions each reported 8-9 cases, for a rate less than 1.0 per 100,000 per region.

Nosocomial Outbreaks

Three nosocomial outbreaks were reported in 1991. Two of the three outbreaks reported were suspected of being viral in origin and occurred at the same nursing facility.

The first outbreak occurred during the spring and was characterized by upper respiratory infection and pneumonia. One death was reported among the 26 cases. The second outbreak at the same nursing facility was characterized by symptoms of nausea, vomiting, diarrhea and some reports of fever. Onset of illness occurred during the month of December. Twenty cases were identified. No deaths were reported.

The third outbreak occurred in an acute care facility and involved nine patients over a three month period. The outbreak was defined as diarrheal illness due to Clostridium difficile. One death was reported in an elderly patient with multiple medical disorders.

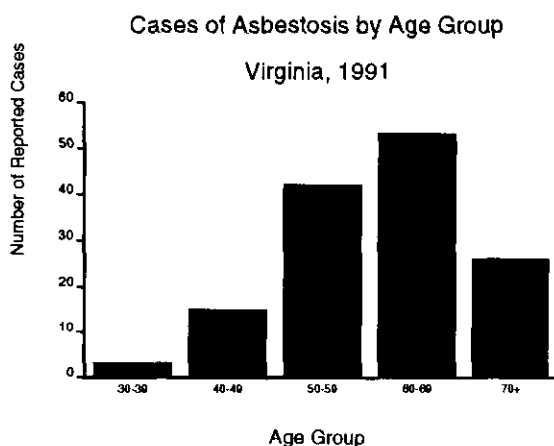
Occupational Illnesses

Asbestosis continued to account for the majority (140 cases, 96%) of the reported occupational illnesses. The 146 cases of occupational illness reported by physicians in 1991 also included two cases of lead poisoning and one case each of fibromyal-

gia, fibrous mesothelioma and carbon monoxide. Due to the overwhelming number of cases of asbestosis compared to the other reported occupational illnesses, only cases of asbestosis will be described further.

The 140 cases of asbestosis represented a 122.2% increase over the 63 cases reported in 1990. The age distribution for the 1991 cases of asbestosis is shown in Figure 28. Almost all of the cases (97.1%) were in their forties or older. The cases were predominately white (110 cases, 78.6%) and male (135 cases, 96.4%). Race was not reported for one case. Cases of asbestosis were reported throughout the year, however, 43.6% of the cases were reported during the first quarter compared to 12.1% during the last quarter.

Figure 28.



Reported cases of asbestosis were divided among 12 localities statewide. The localities with the higher number of cases were located in the eastern health planning region. The city of Newport News had the highest number of cases reported (44 cases,

31.4%), followed by Norfolk (29 cases, 20.7%), and Chesapeake (27 cases, 19.3%). The remaining cases were reported from the southwest and central health planning regions. No cases were reported from the northwest or northern regions.

The industry employing the most persons with asbestosis was shipbuilding (68 cases, 48.6%), followed by the textile industry (20 cases, 14.3%), the U. S. Navy (12 cases, 8.6%), the chemical industry (10 cases, 7.1%) and the transportation industry (6 cases, 4.3%). Each of the other industries reported three or fewer cases. Pipefitters (22 cases, 15.6%) appear to be at a greater risk for asbestosis than any other occupation.

Ophthalmia Neonatorum

No cases of ophthalmia neonatorum were reported in 1991. The last case was reported in 1990.

Other Meningitis

Fifty-six cases of meningitis caused by organisms other than bacteria or viruses were reported in 1991. Twenty-eight reports of cryptococcal meningitis accounted for one-half of the other meningitis reports and the organism was unspecified for the other one-half. The highest number of cases was reported for the 50 years and over

age group (21 cases). The number of cases in whites was slightly higher than non-whites (27 vs. 22 cases, respectively). Race was not reported for seven cases. Males were twice as likely to be reported as females. Onset of illness occurred in the summer (July - September) for 23 of the 56 cases.

Of the 19 deaths reported, 52.6% were due to cryptococcal meningitis. Seven of the persons who died of cryptococcal meningitis were male, with a mean age of 35 years. The overall number of deaths among males and females was 15 and 4, respectively.

Cases were reported from throughout the state with the highest number (18 cases) being reported from the eastern health planning region.

Parasites, Intestinal

In addition to giardiasis and amebiasis, selected reports of other parasitic intestinal diseases are recorded. In 1991, these included 119 cases of ascariasis (roundworm), 111 cases of hookworm, 72 cases of trichuriasis (whipworm), 13 cases of strongyloides, and 1 case of cryptosporidiosis.

Significant increases in the number of reports of ascariasis, hookworm, and trichuriasis during 1991 contributed to a 37% increase in the number of cases of this category of parasitic intestinal diseases over 1990 (316 vs. 237 cases).

Persons in the 10-19 age group had the highest number of cases reported (92), followed by the 20-29 age group (62 cases), the 40-49 age group (52 cases), the 1-9 year olds (52 cases), the 50 and older age group (24 cases), and the 30-39 age group (17 cases). No cases were reported in infants; age was not reported for 19 cases. Approximately 90% of the cases were of the "other" race group. Males outnumbered females 1.3 to 1.

Cases occurred throughout the year but peaked in July (50 cases). The southwest health planning region reported the most cases (146), followed by the central (110 cases), eastern (39 cases), northern (15 cases), and northwest (6 cases) regions.

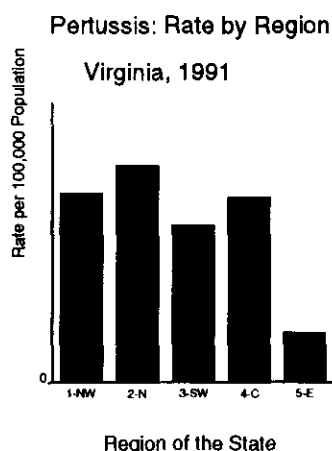
Pertussis

Twenty-four cases of pertussis were reported in 1991, which is below the ten year average of 34.8 cases per year. Six to eight cases were reported per quarter during the first three quarters of the year. No cases were reported in October, November, or December of 1991.

The majority of cases were infants (18 cases, 22.7 per 100,000). Four persons with pertussis were in the 1-9 age group; two were age 10-19. Race was not reported for 18 (75.0%) of the cases. Pertussis morbidity was similar for males (11 cases, 0.4 per 100,000) and females (13 cases, 0.4 per 100,000).

The northwest, northern, southwest, and central health planning regions experienced similar incidence rates, ranging from 0.4 to 0.6 cases per 100,000 population. The rate was lower in the eastern region (0.1 per 100,000). The distribution of incidence rates of pertussis by region is shown in Figure 29.

Figure 29.



Phenylketonuria (PKU)

Two cases of PKU were reported in 1991 compared to three cases in 1990 and 1989. The same as last year, all cases were infant white females identified through newborn screening programs.

One case was reported from the northwest health planning region and one from the eastern health planning region.

Plague

No cases of this disease have been reported in Virginia during the twentieth century.

Poliomyelitis

The last reported case of poliomyelitis in Virginia occurred in 1978.

Psittacosis

Five confirmed cases of psittacosis were reported in Virginia in 1991 compared to two cases in 1990. The five cases in 1991 included four females and one male. They were all white, ranging in age from 14 years to 65 years. The source of infection was traced to infected birds; three birds were in private homes and two were in pet shops. Four of the five cases had onset in 1990. All five cases were reported from the eastern health planning region.

Q Fever

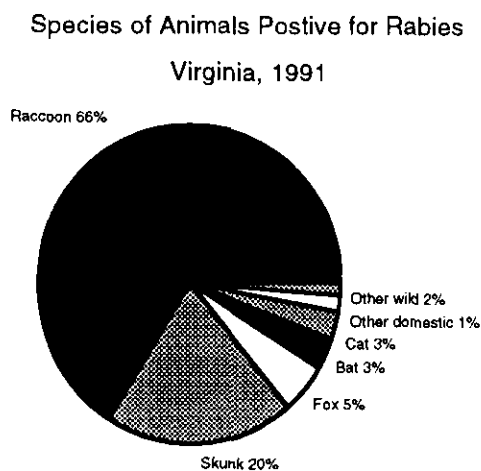
The last case of Q fever reported in Virginia was in 1987.

Rabies in Animals

The total number of laboratory confirmed rabid animals for 1991 was 253; a 20% increase from the 1990 total of 202. The raccoon rabies outbreak continued its geographic expansion. Five localities reported rabid raccoons for the first time in 1991; Appomattox, Charlotte, Isle of Wight, Southampton, and Suffolk.

For the tenth year in a row raccoons were the most commonly reported species with rabies. The 167 rabid raccoons accounted for 66% of all rabid animals (Figure 30). Of the 51 (20%) skunks reported, only five were from the skunk endemic area in southwest Virginia. The rest were from the raccoon outbreak area and represented either "spillover" from infected raccoons or the transmission of the raccoon rabies virus from skunk to skunk.

Figure 30.

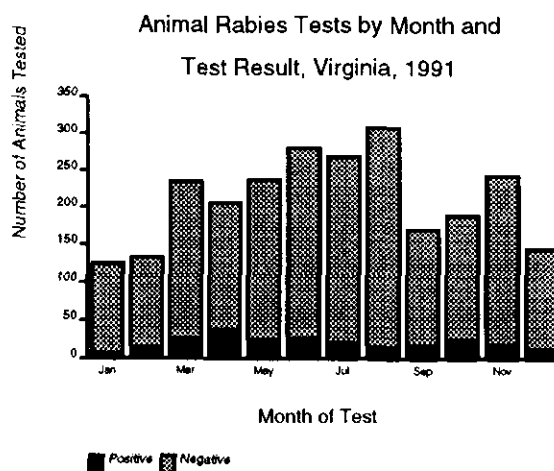


Other wildlife reported as rabid in 1991 included 13 foxes, 8 bats, 2 groundhogs, and 1 bobcat. Rabid domestic animals included 7 cats, 2 dogs, 1 cow, and 1 horse.

Fewer animals were tested in 1991 than in 1990 (2,546 vs. 2,730), but the percent positive was higher in 1991 (10% vs. 7%). The most commonly tested animals were cats (28%), dogs (18%), and raccoons (17%), similar to the 1990 percentages. Although skunks only accounted for 3% of the animals tested, 59% of these were rabid. The proportion of tested raccoons with rabies was 40% while 1% of cats and less than 1% of the dogs were positive.

Fairfax County contributed 9% of the animals tested; 7% came from Loudoun, 6% from Prince William and less than 3% from each of the rest of the counties and cities. The localities contributing the largest proportions of positive animals to the state total were: Loudoun (14%), Fairfax (8%), Newport News (7%), Augusta (4%), Fauquier

Figure 31.



(4%), and Isle of Wight (4%). The number of animals tested is compared to the number of positive for each month in Figure 31.

Human exposure was reported for 100% of the rabid cats, dogs and horses, 25% of the rabid bats, 20% of the rabid foxes, 12% of the rabid skunks, and 6% of the rabid raccoons.

Rabies in Man

No human rabies cases were reported in 1991. The last reported case occurred in 1953. Fewer people received postexposure prophylaxis in 1991 than in 1990 (222 vs. 250). There was a substantial decrease in the number of people receiving preexposure prophylaxis (552 in 1991 vs. 1,058 in 1990).

Reye Syndrome

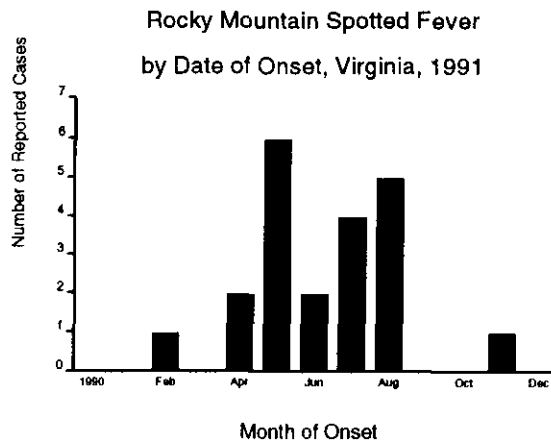
Two cases of Reye syndrome were reported in Virginia in 1991, compared to one case in the previous year. Both cases occurred in white males. One of the cases was an infant that died. One case was reported from the northern health planning region and one from the southwest region.

Rocky Mountain Spotted Fever

Twenty-one confirmed cases of Rocky Mountain spotted fever were reported in 1991. Even though this number is less than the 25 cases reported in 1990, it is comparable to the mean yearly figure for the last four years (20.5 cases).

The incidence rate was highest among 1-9 year olds. Incidence rates among the other age groups ranged from 0.2 to 0.4 cases per 100,000. No cases were reported in infants. The incidence rate was the same for whites (0.3) and nonwhites (0.3). Males were almost 2.5 times more likely to be infected than females (0.5 vs. 0.2 cases per 100,000). Onset occurred for the majority (90%) of cases between April and August of 1991 (Figure 32).

Figure 32.



The southwest and eastern health planning regions reported seven cases each for corresponding incidence rates of 0.6 and 0.4 cases per 100,000, respectively. No deaths were reported.

Rubella

No cases of rubella were reported in 1991. One case had been reported in the previous year.

Salmonellosis

The 1,312 cases of salmonellosis reported in 1991 was 179 cases less than in the previous year. The most frequently reported species are listed in Table 10. New-comers to this list compared to 1990, include *S. poona* and *S. muenchen*. Species which have been removed from this list since last year are *S. thompson* and *S. saint paul*. Forty percent of cases occurred during the summer (June-August), as shown in Figure 33.

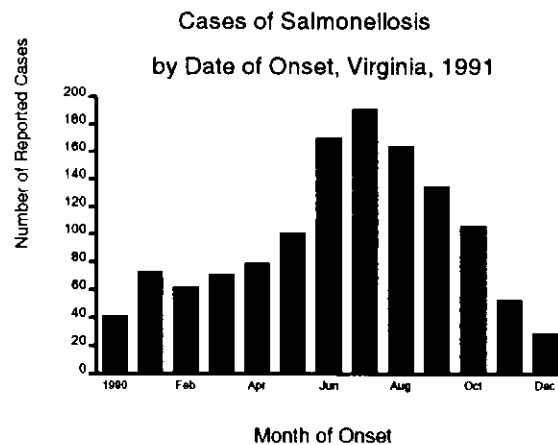
Cases were reported in each age group. Young children (age 1-9) and persons 50 or older accounted for the most cases (317 cases and 222 cases, respectively). The incidence rate, however, was highest in infants (250.4 cases per 100,000). Non-whites were almost twice as likely to be reported as whites. The incidence rate was the same for males and females.

Table 10. Number and Percent of *Salmonella* Infections by Species, Virginia, 1991.

Species Causing Infection	Number of Cases	Percent of Cases
<i>S. typhimurium</i>	299	22.79
<i>S. enteritidis</i>	238	18.14
<i>S. heidelberg</i>	75	5.72
<i>S. newport</i>	54	4.12
<i>S. hadar</i>	46	3.51
<i>S. poona</i>	39	2.97
<i>S. agona</i>	31	2.36
<i>S. montevideo</i>	19	1.45
<i>S. berta</i>	17	1.30
<i>S. muenchen</i>	16	1.22
Unspecified	292	22.26
All Others	186	14.18
TOTAL	1312	100.00

Five *Salmonella* foodborne outbreaks were reported in 1991. These outbreaks accounted for over 165 cases and included three different species (see Foodborne Outbreaks section).

Figure 33.



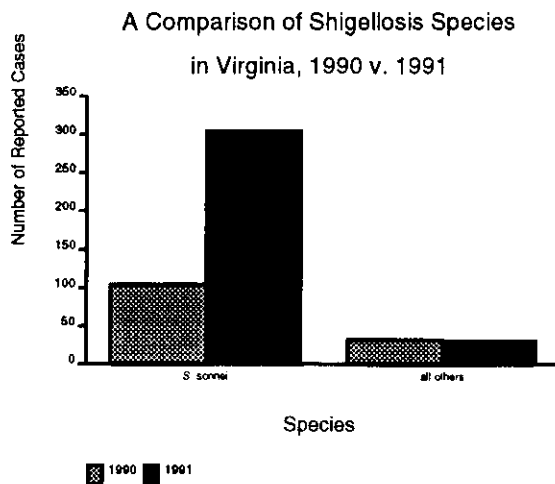
The northern health planning region had the highest incidence rate of salmonellosis (27.6 cases per 100,000), followed by the central region (26.5), the northwest region (19.0), eastern region (18.3), and then the southwest region (14.4).

Two Salmonella associated deaths were reported in 1991. Both were over the age of 65.

Shigellosis

The number of reports of shigellosis increased in 1991 (384 cases), compared to 1990 (158 cases). The increase in cases was associated with a significant increase in the species S. sonnei. Reports of all other species in 1991, compared to 1990, either decreased or there was no change. Reports of S. sonnei in 1991 were approximately twice the total number of Shigella infections in 1990, and accounted for 79.4% of the cases (Figure 34).

Figure 34.



Infections due to Shigella occurred throughout the year, but peaked during the spring and early summer months (March - June) when approximately 50% of the cases occurred. Cases were least likely to be reported during the winter months (December - February) when approximately 15% of the cases occurred.

Infants and adults aged 50 years and over were the least likely to be reported with shigellosis. Young children (age 1-9) were the most likely to be reported (188 cases, 23.9 per 100,000). Race was not reported for 158 cases. For the remaining 226 cases, 138 were white and 88 were nonwhite. The nonwhite incidence rate (6.3 cases per 100,000) was twice as high as the rate for whites (2.9 cases per 100,000). The incidence rate for females (6.5 per 100,000) was slightly higher than for males (5.5).

A community-wide outbreak in the southwest health planning region contributed to the 58.9% increase in the number of shigellosis cases reported this year over the previous year. The southwest health planning region reported the highest number of shigellosis cases (220) and corresponding incidence rate (17.7 cases per 100,000) during 1991 than any other region. Nineteen cases were reported from that region in 1990, compared to 16 cases in 1989, 47 cases in 1988 and 26 cases in 1987.

The number of reports of Shigella infection increased from all areas of the state, except the eastern region which experienced a 41.2% decrease.

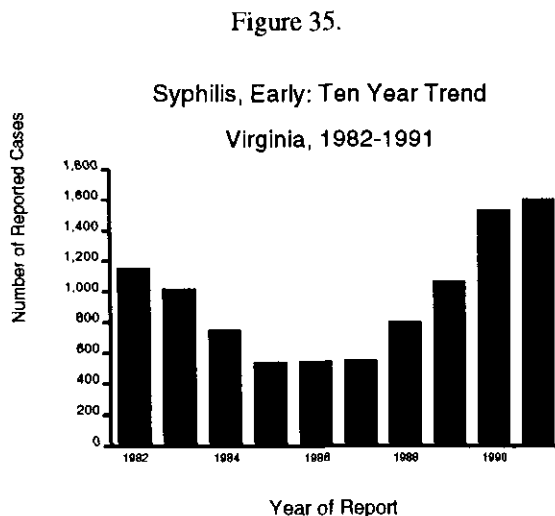
Smallpox

The last reported case of smallpox in Virginia occurred in 1944.

Syphilis

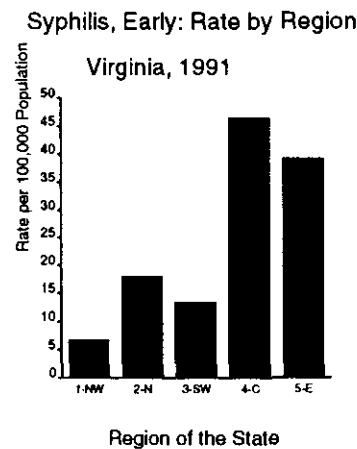
Early Syphilis

Early syphilis includes the primary, secondary, and early latent stages of syphilis. The number of case reports of early syphilis increased 4.6% from 1,551 cases in 1990 to 1,622 cases in 1991. This is the fourth consecutive year that the number of early syphilis cases has increased, reversing a downward trend observed in the early 1980's (Figure 35).



The majority of early syphilis cases (74.2%) were between the ages of 20 and 39, with nearly half (48.4%) of the morbidity found in the 20-29 age group (785 cases, 71.7 per 100,000). Nine percent of the cases were white (150 cases, 3.1 per 100,000) and 90.5% were nonwhite (1,468 cases, 105.1 per 100,000). Less than one percent of the cases did not have race reported.

Figure 36.



The number of female cases increased two percent from 772 cases in 1990 to 788 cases in 1991. The corresponding increase in the number of cases in males was 6.5% from 779 cases in 1990 to 830 cases in 1991. The incidence rate per 100,000 population was 25.0 for females and 27.3 for males.

The eastern health planning region reported the most cases (625 cases, 39.6 per 100,000), followed by the central region (497 cases, 46.8 per 100,000), northern (270 cases, 18.4 per 100,000), southwest (171 cases, 13.7 per 100,000), and the northwest (59 cases, 7.1 per 100,000). In-

idence rates by region are illustrated in Figure 36.

Congenital Syphilis

In 1991, fifty-one cases of early congenital syphilis were reported. Nineteen of the cases were from the eastern health planning region, 15 in the central region, 14 in the northern region, two in the southwest, and one in the northwest. Forty-six of the infants were nonwhite and five were white.

The mother's average age was 23.1, with a range of 15 to 35 years. Thirty-eight (74.5%) were single. The date of the first doctor's appointment was known for all of the mothers who received prenatal care (29 mothers). Eight sought prenatal care during their first trimester, eight during the second trimester, and 13 during the third trimester. Of those whose prenatal care began in the last trimester, six began during the final month and three during the final week.

The 51 cases in 1991 represented a 104% increase over the 25 cases reported in 1990. The increase in early congenital syphilis is a reflection of the high incidence of early syphilis in women of childbearing age. Due to the nine month gestation period, there is usually a lag that exists between an increase of early syphilis and early congenital syphilis. The 53% increase in the number of early syphilis cases experienced by females in 1990 contributed to the increase in early congenital syphilis cases for 1991.

In March of 1990, the Virginia Board of Health enacted a regulation requiring physicians to examine and test high risk pregnant women for syphilis at the beginning of the third trimester. The results of this regulation increased disease detection and treatment, which should result in a decrease in early congenital cases reported during future years.

Tetanus

No cases of tetanus were reported in 1991. Two cases had been reported in the previous year.

Toxic Shock Syndrome

The number of confirmed toxic shock syndrome cases increased to five in Virginia in 1991. Three of the five cases had onset during the first quarter of 1991. The cases were all white females ranging in age from 12 to 41 years. No deaths were reported. Two cases were reported from the southwest health planning region, and one case each from the northern, northwest and eastern regions.

Toxic Substance Related Illnesses

Twelve persons in three families in Pittsylvania County were found to have elevated levels of mercury after the handwriting of one of the children was observed to decline severely. The exposure occurred when a vial of mercury was spilled in one home and the vacuum cleaner used to clean it up was shared with the other two homes.

Toxoplasmosis

Five cases of toxoplasmosis were reported in 1991, compared to seven cases in the previous year. Encephalitis due to *Toxoplasma* is included under the heading Encephalitis, Primary.

One case of toxoplasmosis was reported in an infant, and the remaining cases were reported in adults between the ages of 20 and 49. Three of the five cases of all males were white and two were nonwhite. Three cases were reported from the southwest health planning region, one from the central region and one from the eastern region.

Four deaths were reported. Three of the deceased were HIV positive. Toxoplasmosis is not officially reportable in Virginia.

Trichinosis

No cases of trichinosis were reported in Virginia in 1991. The zero case count follows the previous year case count of 16 cases when an outbreak of trichinosis was investigated.

Tuberculosis

Virginia's tuberculosis morbidity decreased in 1991 to 379 cases from the 410 reported in 1990. This total includes 18 reactivations of previously diagnosed and treated tuberculosis cases. The 1991 incidence rate was 6.1 per 100,000 population. While the number of cases of tuberculosis reported per year continued to decline, the rate of decline has slowed. Since 1987, the number of tuberculosis cases has declined by 17.2%, compared to 38.2% in the previous five year period.

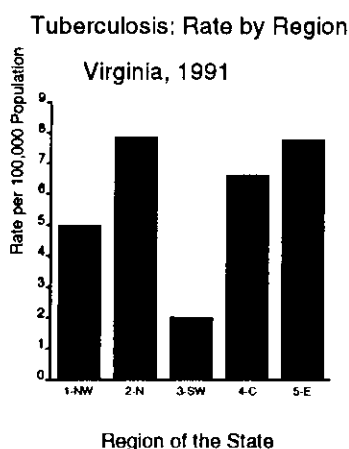
Persons in the age 50 and older age group are the most likely to develop active tuberculosis; 203 cases occurred in this group, for an incidence rate of 13.9 per 100,000. The rate in other adult age groups ranged from 4.4 in 20-29 year olds to 5.5 in those age 30-39, and 5.6 in the 40-49 age group. Sixteen cases were age 1-9 (2.0 per 100,000), and five were in the 10-19 category (0.6 per 100,000). The mean age of persons with tuberculosis in 1991 was 52.2 years. Thirty-eight percent of the cases reported in 1991 were age 65 or older.

Males (226 cases, 7.4 per 100,000) were more likely to be reported with tuberculosis than females (153 cases, 4.9 per 100,000). The incidence rate was much higher in nonwhites (257 cases, 18.4 per 100,000) than in whites (122 cases, 2.5 per 100,000). The nonwhite cases include 147 African-Americans, 86 Asians, 23 Hispanics, and 1 American Indian.

Foreign born individuals accounted for 125 cases (33.0%). Vietnam and the Philippines were the birth countries for 40.8% of all foreign born cases in 1991. The incidence rate in foreign born persons living in Virginia was 40.1 per 100,000, compared to 4.3 for U.S. born residents.

The eastern health planning region reported the most cases (124 cases, 7.86 per 100,000), but the northern region had the highest incidence rate (116 cases, 7.91 per 100,000), as shown in Figure 37. These two regions together accounted for 63.3% of the cases reported in 1991. Seventy-one cases were reported from the central health planning region (6.7 per 100,000), 42 from the northwest (5.0 per 100,000), and 26 from the southwest (2.1 per 100,000).

Figure 37.



Thirty-two cases (8.4%) were resistant to at least one antituberculous medication. This represented a 52.4% increase over the 21 drug resistant cases identified in 1990. Four cases were resistant to both isoniazid and rifampin.

Forty-four (11.6%) of the cases reported in 1991 died.

Tularemia

No cases of tularemia were reported in Virginia in 1991. Two cases, however, were reported in 1990.

Typhoid Fever

The number (11) of reported cases of typhoid fever increased in 1991 by 83.3% over the 6 cases reported in 1990. The increase in 1991 followed a two year decline in reported cases in Virginia. Travel histories, when available, revealed that cases had traveled in or recently arrived from foreign countries where malaria is endemic, including India (2 cases), Egypt (1 case) and Nigeria (1 case).

Five (45.5%) of the cases were in the 20-29 age group. Four cases reported were below this age group and two cases were above. Six (54.5%) of the cases were white. The majority (81.8%) of the cases